THE SURGICAL TREATMENT OF CHRONIC DYSENTERY.

ADDRESS IN SURGERY.

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CHRONIC dysentery, up to recently, has been considered as a disease belonging exclusively to the domain of medicine. The results obtained by medical treatment alone have been found absolutely inefficient in 14% of all chronic cases. The reports from the office of the Surgeon General of the Army show that since the advent of the Spanish-American war there have been admitted to the military hospitals, suffering from chronic dysentery, 4,255 men. The diagnosis was made in the majority of cases between the bacillary form and the amebic form, but no accurate record can be obtained; the large majority, however, being of the amebic type. Of the 4,255 chronic cases, 282 were discharged for disability and 253 died, giving a mortality of 6.66%. Of those discharged for disability, the majority go on suffering for months and years, with frequent exacerbations of the disease, until they die from exhaustion, abscess of the liver or one of the other sequelæ of this disease.

Of those who have been discharged cured, after having been in the hospital for several months, all still show amebæ in the stools, and it will probably be only a matter of time when the slightest error in diet will cause an exacerbation of the disease, with all the attendant miseries. This is the history of the disease. We can scarcely consider an individual cured of a disease when it is likely at any moment, without any provocation, to break out afresh, or to result in abscess of the liver at some future time. Harris states that in chronic cases of amebic dysentery perfect recovery is doubtful. When the disease is due to the Shiga bacillus it is more amenable to treatment, but cases will be met with in which the diarrhea will persist in spite of all treatment.

The pathology of the two forms of dysentery varies somewhat, and accounts for the great difference in the number of chronic cases observed in the different varieties. The ulcers in the bacillary form are as a rule more superficial, and do not involve the deeper layers of the bowel; while in the amebic form the submucus coat is almost always attacked, and, even if the ulcers cicatrize, there will be a large amount of contraction follow. In the bacillary dysenteries, the ulcers, while usually confined to the large bowel, may involve the entire intestinal tract; these cases rarely become chronic, but die in the acute stage. In the amebic form we very rarely find the ulcerations extending above the ileo-cecal valve, and in over 100 cases which came to autopsy only one showed ulcers in the ileum, and they did not extend more than a few inches above the valve. In most cases the ulcerated patches are found in the rectum and sigmoid flexure, and in the cecum, very few being found in the intermediate portion of the colon.

The study of the pathology shows the difficulties which have to be surmounted in effecting a cure in this disease. Medicines taken by mouth are avowedly inefficient in curing cases of chronic dysentery, and local applications through the rectum cannot in the vast majority of cases reach all the diseased areas. It is to these cases, which have resisted the best known means of medical treatment, that I desire to call attention, and recommend surgical measures.

The measures advocated are colostomy, right or left inguinal, artificial anus, and exclusion of the large intestine, partial or complete. These are not new suggestions, as may be found by examining the literature on the subject. In 1902 Labbey collected all the cases reported up to that time, and Nehrkorn gives a complete resume of cases of chronic ulcerative colitis reported up to April, 1903. He gives excerpts from the histories of 34 cases, but in only two of these is any mention made with regard to the microscopic findings. Both of these cases were due to the ameba coli, all the rest of the cases were considered as dysentery on the clinical symptoms, and in a number of the cases by finding ulcerations in the rectum.

Nehrkorn divides the cases into three groups: No. 1, in which the disease begins acutely and at the end of six or eight weeks must be operated on or the patient will die of exhaustion; No. 2, cases in which the disease begins in a mild form and after several weeks sudden acute exacerbations come on which may destroy the patient; No. 3, cases which have become chronic and have acute exacerbations at greater or shorter intervals, the patient being fairly well in the interim. In the 34 cases reported, 5 died shortly after the operation, rather from their exhausted condition than from the operation itself. Nehrkorn, basing his judgment on the reported cases, believes that left inguinal colostomy is the preferable operation (7 successes and 1 failure), right inguinal colostomy giving 6 successes and 3 failures. He does not believe that primary entero-anastomosis is proper, because it does not allow as thorough treatment of the diseased surfaces as colostomy, but he admits that the cure will be much more effective if the large bowel is excluded after all the diseased surfaces are apparently healed.

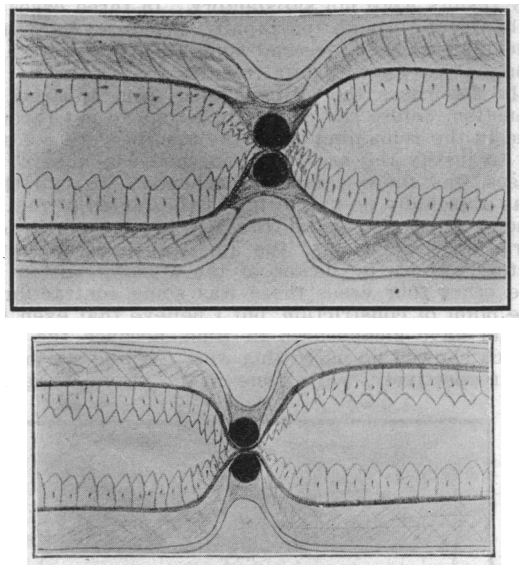
My attention was first called to this subject by seeing a case of chronic amebic dysentery in April, 1900, with Dr. Wm. N. Sullivan, which had been treated for one and a half years without any benefit. I made a right inguinal colostomy, and the immediate result was certainly brilliant. The numerous stools with their accompanying tenesmus ceased instantly, and the patient was able to eat food which had been excluded from his diet for over a year. The colostomy wound was kept open for four months, and then closed by operation, and the patient resumed work shortly after. I have recently learned that some time in 1903 he began to dissipate, and developed an abscess of the liver from which he died, showing that even after four months local treatment through a colostomy wound, we are not sure of having destroyed all the amebæ, and if the bowel is allowed to resume its function, the peristaltic action, coupled with its absorbing capacity, will permit any amebæ which may be present to pass through into the circulation, and cause abscess of the liver.

The second case which came under my care was also a patient of Dr. Sullivan who gave the following history: General health good up to time of enlisting in the U. S. army in April, 1898, at which time he was 21 years old. His health continued good up to September, 1898, when after a short stay in Manila he contracted a violent diarrhea. The stools soon became bloody, and in November of the same year he was in the army hospital at Ermita, P. I., where a diagnosis of dysentery was made, but it is not known whether the bacillus dysenteriæ was found or not.

He had relapses in February, May, June and July, 1899, and was finally sent home and mustered out in September, 1899.

After his discharge from the army he placed himself under the care of Dr. Sullivan, and improved considerably; but subsequent violent exacerbations occurred in March and September, 1900, and in April

and May, 1901, the patient never being free from pain even in the interim. While in the Philippines, the bowel movements ranged from 15 to 25 a day, while in America during the attacks from 10 to 15 and in the interim as low as 3 or 4 a day; but during this entire time he suffered from severe pain, especially over the descending colon. The greatest improvement was observed when the patient resorted to rectal injections of solutions of sulpho-carbolate of zinc, cut out all meats, and lived an out-door life;

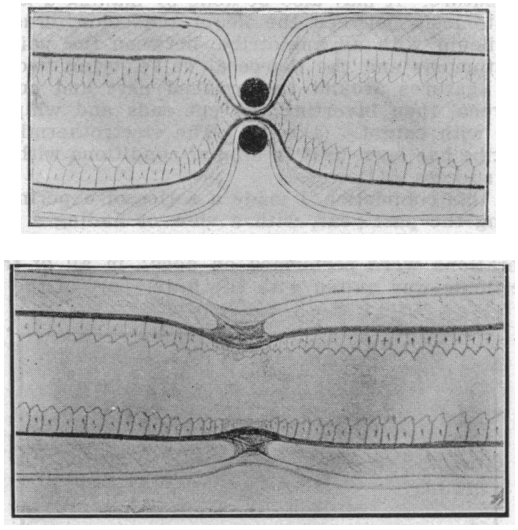


Figs. I and II.—Schematic representations of transit of rubber through intestinal wall. (See Figs. III and IV for continuation.)

but when in May, 1903, he failed to obtain relief from these means, he again consulted Dr. Sullivan, who advised colostomy. The patient entered the hospital on July 26, 1903. His general appearance indicated prolonged suffering, and physical examination showed the body to be much emaciated, heart and lungs normal, but the heart sounds somewhat weak; abdomen flat, palpation showing signs of tenderness over the entire colon, but best marked over the descending portion. The liver and spleen were apparently normal in size. No ulcerations could be detected in the rectum. Examination of the blood by Dr. Ryfkogel gave reds 5,010,000, whites 18,000, hemoglobin 90%. Differential: Neutrophiles 78%, lymphocytes 8%, mononeuclears 5%, eosinophiles 9 per cent. Clumping reaction with Shiga bacilli positive. The urine showed nothing abnormal except numerous calcium oxalate crystals. Examination of feces showed numerous colonies of bacilli, which could not be morphologically differentiated from the colon bacillus, and eggs of the tricocephalous dispar.

Owing to his exhausted condition it was thought best to use spinal analgesia, and on August 1st the abdomen was opened, the appendix removed and the cecum sutured to the edges of the wound. The bowel was opened on the third day, and the colon flushed out with mild antiseptic solutions, through the colostomy wound. This was repeated daily, varying the program by washing one day through the rectum, and the next through the wound, until the solutions came away clear. An interesting feature occurred on the tenth day, when a live tricocephalous dispar was removed from the colostomy wound. The day following the opening of the bowel all tenesmus and pain stopped, and the patient began to take nourishment without experiencing the distress which always occurred previously, especially when meats were eaten. Gradual improvement took place for about four weeks, when it was noticed that less discharge was coming from the colostomy wound and more from the rectum, and coincidentally the patient experienced some pain in the left side. This increased for two weeks, and despite the fact that the colostomy wound was enlarged the fecal matter passed by and entered the colon. I then decided to divert the fecal current, and on September 19, 1903, under chloroform, opened the abdomen in the median line and united the ileum, about eight inches from the ileo-cecal valve, to the lower part of the sigmoid flexure, by means of a Murphy button. The intestines were normal in appearance, excepting that the blood vessels were considerably dilated, especially those of the descending colon and the sigmoid. These portions of the bowel felt much thicker than the other portions, but no definite areas of ulceration could be made out, and I therefore concluded that if any had existed they were apparently healed, leaving the mucosa infiltrated, irritable and congested. The colostomy wound was left open in order to observe the effect of the anastomosis. For several days following this operation the patient had severe pain on his left side and back, which required morphine to relieve. I cannot account for this pain in any way except that it resulted from handling the delicate, tender intestine.

The button was passed on the fourteenth day and after that time it was noticed that very little fecal matter was passed through the colostomy wound. By the first of November, 1903, the patient's condition was so good that it was decided to close the colostomy wound, which was done under local anesthesia.



Figs. III and IV.

It was found necessary, after the anastomosis, to use enemata to move the bowels, and the movements were usually formed. Meats, which had been excluded from his diet previous to operation, were resumed without the slightest ill effect, and the patient was able to enjoy his Thanksgiving dinner to the fullest.

When we consider that the formation of abscess of the liver, and the recurrence of dysenteric attacks, is due to the fact that the ameba coli has not been driven from the colon, we can appreciate the necessity of resorting to means which will prevent these terrible sequelæ. The only way to positively get rid of the amebæ is to remove the entire diseased areas of the bowel, before the amebæ have succeeded in passing beyond its limits; but as this is usually impracticable, we must resort to milder measures, even if they are less efficient. The nearest approach to excision of the colon is its complete exclusion. This must not be done unless either one or both ends of the excluded bowel are left open, and sewed into the abdominal wall, because closing both ends of a portion of intestine containing pathogenic materials will produce a rapidly fatal peritonitis.

It has been shown by Kammerer and others that when a portion of bowel has been completely excluded from the fecal circulation its peristalsis ceases, and both absorption and secretion stop after a time; the bowel contracts to a very narrow lumen, and the blood supply diminishes. It can be easily understood then how any inflammatory condition will subside, and necessarily the exciting cause, be it amebic or bacillary, will gradually die out, because we have removed the factors which tend to keep alive these infectious processes. The loss of the large intestine seems to have very little influence on the nutrition of the individual, and usually even the stools lose their liquid character, which they at first assume, and shortly become normal in character.

Next in efficiency to complete exclusion is unilateral exclusion, which is accomplished by uniting the lower part of the ileum to the lower part of the sigmoid flexure or the upper part of the rectum. This may be done by cutting off the ileum about eight inches from the ileo-cecal valve and anastomosing the proximal end into the colon as near the rectum as possible. The distal end is closed by invagination and suture. It may also be done by making a lateral anastomosis between the ileum and colon, crushing the ileum with an angiotribe, between the point of anastomosis and the ileo-cecal valve, tying two catgut ligatures around the crushed part and cutting between, then inverting the cut ends and whipping over with catgut. (Doyen.) The electrothermic angiotribe has been used in similar conditions with perfect success. (Downes.)

In this connection, I made a series of experiments during the past year, with a view of finding a more rapid method of accomplishing this result. Fifteen operations were performed on dogs; in all of them the ileum was united with the lower part of the sigmoid flexure by means of the Murphy button, making a lateral anastomosis. A piece of rubber cord about two millimeters in diameter was then passed through the mesentery of the ileum, at a point two inches from the anastomosis, and tied in a single knot over the intestine, completely occluding its lumen. The knot in the rubber was secured by means of a silk ligature in the same manner as advised by McGraw. I had hoped that the gradual contraction would eventually cut the bowel through and close both ends. After the rubber began to cut through the close apposition of the peritoneal surfaces would prevent any infection of the peritoneal cavity, and I expected to find the intestine still in continuity, but with an occluding diaphragm. I am sorry to have to report that my results were not satisfactory. In three cases the rubber cut through too rapidly (inside of 48 hours), and allowed the intestinal contents to infect the abdominal cavity with fatal results.

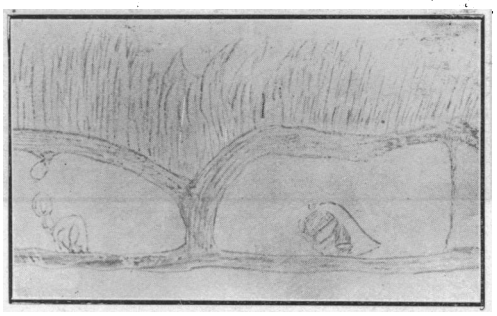


Fig. V.—Drawn from section of ileum six months after using rubber ligature.

In five cases the animals died from apparent exhaustion, before the rubber had time to cut through, and in the remaining cases the results were not such as to justify the use of the method. In none of my cases was there complete occlusion. In two there was absolutely no narrowing of the lumen of the gut, and a cross section at the site of the rubber constriction gave exactly the appearance of a circular enterrhoraphy by means of the Murphy button. In the other four cases there was some contraction at the point of constriction, but I believe that even that would have disappeared in time, because the cases which showed no narrowing were five and six months old respectively, while none of the others were over three months. The rubber evidently cut its way through the several coats of the bowel, entered its lumen, and was passed *per vias naturales*.

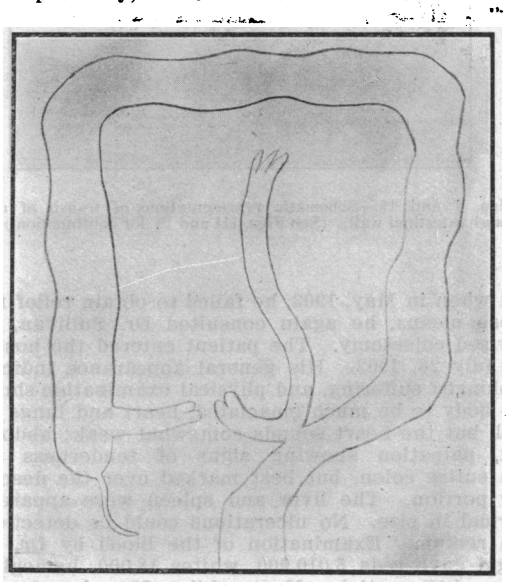


Fig. VI.—Ileo-Colostomy. (Doyen.)

Examination of the various specimens shows that the pressure of the constricting band forced out the mucosa and muscularis from under it, leaving only the peritoneum and submucosa; and that as the rubber cuts through the peritoneum the cut edges unite over the elastic band. This occurs in a similar manner with the submucosa, keeping up the continuity of the intestine. This peculiar state of affairs prevented any union of the submucosa from taking place within the lumen of the bowel on each side of the rubber, as I had hoped. It took from five days to two weeks for the rubber to cut through, the time evidently depending on the tightness of the rubber band.

I believe that the results which I obtained will account for some phenomenal cases of obstruction of the bowel, which have been reported as having recovered without operation. It would be easy to understand how a constricting band, which was causing obstruction, would cut its way completely through the bowel, in the same manner as the rubber, and have the lumen of the bowel restored after a complete obstruction had existed for some days.

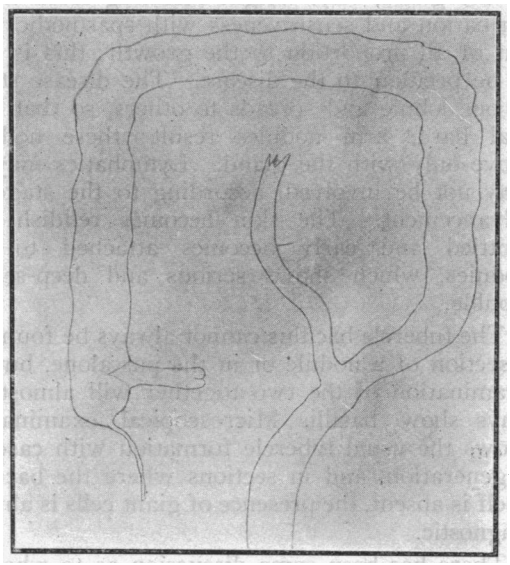


Fig. VII.—Ileo-Colostomy. (Best method.)

In some cases of chronic dysentery the bowel will be found in fairly good condition, and still the patient will have numerous stools with evidence of infection, which has resisted all treatment. In these cases I would advise merely diverting the fecal stream by a lateral ileo-colostomy as in the case reported, but I believe that the best results will be obtained in all cases by making a preliminary colostomy, or, better, drawing a loop of ileum, as near the ileo-cecal valve as possible, into a right inguinal incision and maintaining an artificial anus, with a spur, until all signs of colitis have subsided. If the case has been one of long standing, and there is good reason to suppose that the mucosa of the colon has been destroyed to such an extent that considerable contraction will supervene, we must put that viscus "hors de combat" by one of the means previously mentioned.

Complete rest of the colon can only be obtained by preventing absolutely any fecal matter from passing through it. The ordinary colostomy is not as certain of accomplishing this result as the artificial anus with spur, which keeps all fecal matter from entering the cecum, and enables us to wash out the entire colon as often as we see fit.

Weir's suggestion of using the appendix, which has been fixed in the abdominal wall and the end cut off, in order to wash out the colon, cannot be advocated as equaling an artificial anus, because we will find in most of the cases of chronic dysentery that the appendix has taken part in the disease process, and its lumen has become almost obliterated. In the two patients on whom I operated, I removed the appendices, and it would have been impossible in either of them to have made use of that organ, on account of the extreme narrowness of the lumen.

Furthermore, this method still allows the fecal matter to pass over the diseased surfaces, and is therefore not to be commended. Primary ileo-colostomy, while it places the colon immediately at rest, does not enable us to treat the diseased parts by direct medication, and it cannot be commended. Complete exclusion, by cutting off the ileum about eight inches from the ileo-cecal valve, and the sigmoid at its junction with the rectum, and uniting the proximal end of the ileum to the upper part of the rectum, then sewing both the other cut ends into the abdominal wall, is an operation which can rarely be performed as a primary measure, on account of the time necessary and the exhausted condition of the patient.

We are therefore narrowed down to colostomy, or artificial anus, as a primary operation, to be followed by one of the others after the patient has sufficiently improved, if the occasion demand. The operation is one of great simplicity, and may be performed in a few minutes under local anesthesia, by making an incision about two inches long over McBurney's point, pulling up the ileum near its junction with the colon, drawing out enough of it so as to be able to pass a sterile rubber catheter of large size through the mesentery, to prevent the possibility of the gut falling back into the abdomen, and to produce a spur. Gauze is packed snugly around the intestine to prevent hernia of other loops, and the operation is completed. It is necessary when the operation has been done in this manner to loosen the bandages and adjust the packing around the loop of gut at least three times in 24 hours in order to allow the gases to pass through the loop. The bowel should be opened on the third day by a transverse incision, cutting through at least three quarters of its lumen. This gives us two openings, one to wash through, the other for the extrusion of the feces.

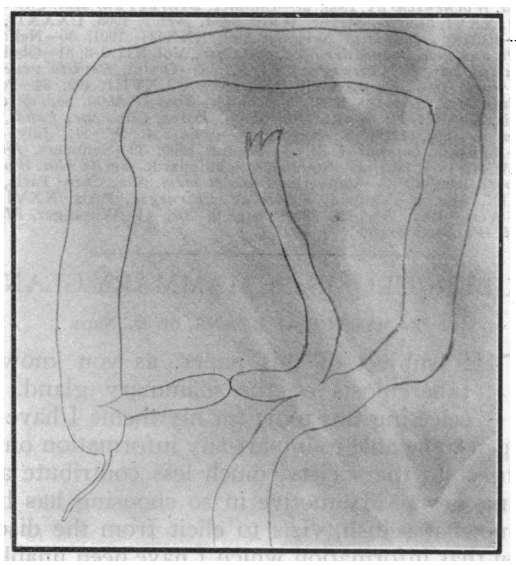


Fig. VIII.— Ileo-Colostomy as done with experimental rubber ligature.

The length of time which these artificial openings are to be kept open cannot be definitely stated; in most of the cases reported the colostomy wounds were not closed for three to twelve months. Judging from the results, I would advise exclusion of the colon in all cases of amebic dysentery which had lasted for more than one year under treatment; the physical condition of the patient determining whether an artificial anus shall be made first, or whether the exclusion shall be the primary operation.

While the surgical measures advocated are not in

themselves curative, they afford us a means of bringing our medicines in contact with the diseased surfaces, and most important of all, they permit us to keep the inflammatory areas at rest, and this will be admitted by the strongest opponent of surgery as being one of the greatest desiderata in any inflammatory condition.

CONCLUSIONS.

A large number of patients with chronic dysentery do not get well under medical treatment alone.

The cases are principally of the amebic type, with prospects of exacerbations, abscess of the liver, contraction of the bowel, and marasmus.

These complications may be obviated in many cases by a timely operation.

The operative procedures are not in themselves particularly dangerous.

The relief afforded is immediate, and will result in cure in many instances.

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TUBERCULOSIS OF MAMMARY GLAND.*

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THE subject of this paper, as you know, is tuberculosis of the mammary gland. In selecting this topic for my theme I have not hoped to be able to impart any information on the subject to the society, much less contribute anything new. My motive in so choosing has been somewhat selfish, viz.: to elicit from the discussion that information which I have been unable to obtain from any other source. Yet I do make this one claim of excellence for this paper. It is short.

There does not seem to be much written on the symptoms, diagnosis, etc., of this disease; if so, I have been unable to find it. It is probably true that many of the cases that have been diagnosed carcinoma of the breast, have in reality been tubercular mastitis, just as before the microscope revealed its true nature, lupus was mistaken for rodent ulcer or epithelioma.

Tuberculosis of the breast may occur at any time after puberty; no cases before puberty have been recorded. With regard to infection, it is said to be more or less direct, usually through the milk ducts and often seems to follow lactation remotely. It is frequently bilateral.

The symptoms are such as follow consolidation of the gland, viz.: weight resulting from tissue formation and sensitiveness with spasmodic pain out of all proportion to the growth; this is said to be peculiar to the disease. The disease starts in one lobule and spreads to others, so that several hard, firm nodules result; these nodules move only with the gland. Lymphatics may or may not be involved, according to the stage of advancement. The skin becomes reddish and mottled and early becomes attached to the nodules, which shows serious and deep-seated trouble.

The tubercle bacillus cannot always be found in a section of a nodule or in the pus alone, but an examination of the two together will almost always show bacilli. Microscopical examination shows the usual tubercle formation with caseous degeneration, and in sections where the bacillus itself is absent, the presence of giant cells is almost diagnostic.

There has been some discussion as to whether or no cachexia is caused by this disease when in a purely uncomplicated form; many authorities claiming that cachexia is always due to mixed infection and never to the tubercle bacillus alone, while others still hold the view that there is a true tubercular cachexia. It has been quite well established, however, that this group of symptoms is always due to a mixed infection. The diagnosis is made by the general condition and history of the patient, the distinct, hard, smooth, firm nodules, the immobility of the growth, the attachment of the skin, and the extreme spasmodic pain; the microscope, of course, deciding the diagnosis if the tubercle bacillus be found.

De Costa speaks of a chronic abscess of the breast which is tubercular, as a lump which slowly enlarges and finally ruptures, forming sinuses. The axillary glands are apt to be involved. The patient gives a tubercular history, with history, as a rule, of previous tubercular trouble of various sorts, and has usually borne children. Chronic abscess of the breast causes little or no pain. It may be treated as any cold abscess elsewhere; if small, open it with aseptic care, rub its walls with gauze to remove tubercular masses, irrigate with bichloride solution 1.1000, pack with iodoform gauze and dress antiseptically. It is wise to remove the entire gland and clear out axilla in order to prevent recurrence and dissemination. There was a case of tuberculosis of the breast in an inmate of our Hospital recently,

* Read before the Napa County Medical Society.